



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/776,597

02/12/2004

Michael S. Sink

A8533

3494

23373

7590

02/24/2006

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

MURALIDAR, RICHARD V

ART UNIT

PAPER NUMBER

2838

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/776,597

Applicant(s)

SINK, MICHAEL S.

Examiner

Richard V. Muralidar

Art Unit

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>07/14/04; 02/12/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 34 is objected to because it contains reference to a standard that may become obsolete with the passing of time. MIL-PRF-49471B contain battery operating requirements suitable to current military needs, which can change as the needs of the military change in the future.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

[b] The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-34 and 37-45 are rejected under 35 U.S.C. 102[b] as being anticipated by Lutz [US-5686808].

With respect to Claim 1, Lutz discloses a state of charge indicator for determining the current capacity of a battery, comprising: a housing [Fig. 1 docking station 10 combined with docking tray]; a microprocessor disposed in said housing [Fig. 4 charge control circuit U2; col. 5 lines 4-15; col. 7 lines 66-67 and col. 8 lines 1-5] and operable to determine current state of charge [col. 6 lines 12-16] for a plurality of different battery types [col. 1 lines 6-9; col. 6 lines 59-62; col. 7 lines 11-12; col. 7 lines 21-23]; and a sensing device located in one

Art Unit: 2838

of said housing and said battery, and electrically connected to said microprocessor, to measure voltage drop in said battery [col. 6 lines 12-16; col. 7 lines 51-54]; wherein said housing is removably attachable to said battery.

With respect to Claim 2, Lutz discloses that the housing [Fig. 1 docking station 10] is constructed with a unique shape and keyed such that it will fit only into appropriate said plurality of different battery types [the housing is uniquely shaped and keyed via notches and tabs to engage battery docking tray 41; col. 5 lines 38-50. Docking tray 41 is similarly provided with tabs and notches that protrude into battery openings to hold the battery in place - see Fig. 9 connector 151 for both unique keying and shape].

With respect to Claim 3, Lutz discloses the housing is constructed with a unique shape and keyed so as to fit into said battery in only one orientation for proper mating of interconnecting electrical contacts [col. 5 lines 38-50; col. 5 lines 55-63].

With respect to Claims 4, 24, and 38 Lutz discloses a sealing feature for affixing said housing to the battery [the docking tray 41 effects this seal by securing a snug attachment [col. 5 lines 41-50 and lines 55-57].

With respect to Claims 5, 25, and 39 Lutz discloses a fastener for securing said housing to the battery [col. 5 lines 38-40].

With respect to Claim 6, Lutz discloses said housing is plugged into said battery [col. 5 lines 38-65].

With respect to Claim 7, Lutz discloses said sensing device is electrically connected to said microprocessor [Fig. 4 charge control circuit U2] through at

Art Unit: 2838

least one contact for measuring the voltage drop in said battery [col. 7 lines 51-54] and wherein said at least one contact [Fig. 4 contact block 70, V_Bat] further provides power to said microprocessor.

With respect to Claims 8 and 21, Lutz discloses said microprocessor is pre-programmable [col. 3 lines 29-40; col. 5 lines 4-15; col. 8 lines 1-5] to determine state of charge of a particular type of battery chosen from said plurality of different battery types [col. 1 lines 6-9].

With respect to Claims 9 and 22, Lutz discloses said microprocessor is programmable [col. 3 lines 29-40; col. 5 lines 4-15; col. 8 lines 1-5] to determine state of charge of a particular type of battery chosen from said plurality of different battery types [col. 1 lines 6-9]. Pre-programmable and programmable mean the same thing.

With respect to Claim 10, Lutz discloses a display [Fig. 1 status LED 1 and 2, discharge LED 15; Fig. 6] disposed in said housing operable to show the current state of charge of said battery.

With respect to Claim 11, Lutz discloses said display has a fuel gage showing the current charge of said battery [the LED's of Fig. 1 is a fuel gage at least capable of showing fully charged, discharged].

With respect to Claim 12, Lutz discloses said housing comprises means for outputting the current state of charge to an external device [col. 6 lines 16-18 a smart battery is the external device].

With respect to Claim 13, Lutz discloses said external device comprises at least one of an audio means and a video means [col. 6 lines 16-18; smart

Art Unit: 2838

batteries with their own built displays are very common in the art. See Beard et al (US-5898290) col. 4 lines 42-67; Figs. 1-5].

With respect to Claim 14, Lutz discloses that when said microprocessor is removed from said battery, said microprocessor is automatically reset [implicit from the circuit of Fig. 4 and interface 70].

With respect to Claim 15, Lutz discloses that when said microprocessor is removed from said battery and reinstalled into said battery, said microprocessor reads a state of charge stored in said battery [Fig. 4 via interface 70 contacts].

With respect to Claim 16, Lutz discloses said sensing device is in the housing [Fig. 4 R9; col. 7 lines 51-54].

With respect to Claim 17, Lutz discloses said sensing device is in the battery [the contacts 21-28 Fig. 1 that supply a signal to the sensing device will protrude into the battery to make contact, as will connector 151 of Fig. 9].

With respect to Claim 18, Lutz discloses said sensing device is a sense resistor [Fig. 4 R9; col. 7 lines 51-54].

With respect to Claim 19, Lutz discloses that at least one contact electrically connects said microprocessor to said battery for providing additional information from said battery [col. 4 lines 10-13; col. 7 line 5; col. 8 lines 1-5; col. 11 lines 10-13].

With respect to Claim 20, Lutz discloses a system for determining state of charge of a battery comprising: a battery having a sensing device to measure battery capacity [Fig. 3 thermistor 51 in battery pack 52; col. 4 lines 10-14]; a reusable state of charge indicator [Fig. 1 docking station 10 with docking tray]

Art Unit: 2838

having a microprocessor [Fig. 4 charge control circuit U2] compatible with different battery types [col. 1 lines 6-9] and operable to determine state of charge based on value received from said sensing device [col. 4 lines 10-14] ; and at least one contact [Fig. 3 contact K4] electrically connecting said state of charge indicator to said battery for providing voltage drop information [voltage drop information is extrapolated from temperature] from said sensing device, wherein said state of charge indicator is removably attachable to said battery.

With respect to Claims 23 and 40, Lutz discloses said state of charge indicator is externally attached to one surface of said battery [the battery is attached on one surface via docking bed 12 and docking tray 41, Fig. 1].

With respect to Claims 26 and 41, Lutz discloses said battery has at least two legs [Fig. 3 one at the positive terminal and the other at the negative terminal] and said state of charge indicator is attached to one leg of said at least two legs and each other leg of said at least two legs has a series resistor [Fig. 3 resistors 55 and 56] for balanced discharge.

With respect to Claims 27 and 42, Lutz discloses said battery has a cavity and wherein said state of charge indicator plugs into said cavity of said battery [the battery cavity accepts connector 151, Fig. 9].

With respect to Claim 28, Lutz discloses at least one contact provides power to said microprocessor [Fig. 4 contact block 70, V_Bat].

With respect to Claim 29, Lutz discloses a display means [Fig. 1 status LED 1 and 2, discharge LED 15; Fig. 6] for displaying the current state of charge of said battery [specifically if the current state is fully charged or discharged].

Art Unit: 2838

With respect to Claim 30, Lutz discloses said display means is a fuel gage [the LED's of Fig. 1 is a fuel gage at least capable of showing fully charged, discharged].

With respect to Claim 31, Lutz discloses said display means is disposed in said state of charge indicator [Fig. 1].

With respect to Claim 32, Lutz discloses said display means is one of an audio device and a visual device, connected to said state of charge indicator via output means [col. 6 lines 16-18; smart batteries with their own built displays are connectable. See Beard et al (US-5898290) col. 4 lines 42-67; Figs. 1-5 for an example of a smart battery with built in display].

With respect to Claim 33, Lutz discloses said battery is a lithium battery [col. 1 lines 6-9].

With respect to Claim 34, Lutz discloses said battery is in military range covered by MIL-PRF-49471B. Lutz's listed battery types would all be listed in here, with modifications on their survivability, operating range, temperature range, etc.

With respect to Claim 36, Lutz discloses said battery further comprises a plurality of receptacles corresponding to said plurality of contacts in said state of charge indicator [Fig. 1 contacts 21-28] and a label covering said receptacles [this is just the protective label that covers the contacts of any newly purchased battery and is irrelevant to the invention].

With respect to Claim 37, Lutz discloses a system of determining state of charge of a battery comprising: a battery having a sensing device to measure

Art Unit: 2838

battery capacity; a reusable state of charge indicator having a microprocessor to determine state of charge of said battery based on value received from said sensing device; and at least one contact electrically connecting said state of charge indicator to said battery for providing voltage drop information from said sensing device, wherein said state of charge indicator is removably attachable to said battery [met by the preceding limitations of claim 20].

With respect to Claim 43, Lutz discloses said battery cavity is uniquely shaped and keyed and wherein said state of charge indicator mates with said cavity and is designed for a particular plurality of batteries [the battery cavity accepts connector 151, Fig. 9 which is uniquely shaped and keyed to fit into the battery cavity].

With respect to Claim 44, Lutz discloses said battery cavity is uniquely shaped and keyed and wherein said state of charge indicator fits only in a proper orientation for mating with appropriate electrical interconnecting contact for electrically connecting said state of charge indicator to said battery [the battery cavity accepts connector 151, Fig. 9 which is uniquely shaped and keyed to fit into the battery cavity, and will only fit in one proper orientation].

With respect to Claim 45, Lutz discloses said state of charge indicator is secured in said cavity by using an interlocking device [col. 5 lines 38-63].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103[a] which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2838

[a] A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 35-36 are rejected under 35 U.S.C. 103[a] as being unpatentable over Lutz [US-5686808].

With respect to Claim 35, Lutz discloses said battery further comprises a memory chip, and said at least one contact electrically connects said microprocessor with said memory chip [it is understood that Lutz's battery charger is a universal battery charger explicitly capable of charging smart batteries col. 6 lines 16-18. Thus it is sufficient to show that one of his listed battery types in col. 1 lines 6-9 can have a memory chip. Smart batteries implicitly have memory chips, and one such example can be found in Beard et al (US-5898290) Fig. 11 battery 201 with memory chip 227; col. 5 lines 11-12].

With respect to Claim 36, Lutz discloses said battery further comprises a plurality of receptacles corresponding to said plurality of contacts in said state of charge indicator [Fig. 1 contacts 21-28] and a label covering said receptacles [this is just the protective label that covers the contacts of any newly purchased battery and is irrelevant to the invention].

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Prior art [US-6829495] by Lee is cited for the disclosure of a battery pack locking apparatus for a cell-phone. Prior art [US-5216371] by

Art Unit: 2838

Nagai is cited for the disclosure of a battery pack with measuring and indicating means, with locking tabs to detachably connect to batteries.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard V. Muralidar whose telephone number is 571-272-8933. The examiner can normally be reached on Monday to Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Gray can be reached on Monday to Friday 8-5. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'David Gray', with a long horizontal line extending to the right.

David Gray
Primary Examiner

RVM
02/17/2005